

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Previously presented) An apparatus for exchanging heat having:

a) at least one first flow path for a first fluid, which is at least partially delimited by at least one first delimiting element;

b) at least one second flow path for a second fluid, which is at least partially delimited by at least one second delimiting element;

c) at least one first diffuser space, which is at least partially delimited by at least one third delimiting element and is connected upstream of the first flow path, the first diffuser space being flow-connected to at least one first connection piece, through which ~~the a flow of the~~ first fluid flows into enters the first diffuser space;

d) at least one second diffuser space, which is at least partially delimited by at least one fourth delimiting element and is connected downstream of the first flow path, the second diffuser space being flow-connected to at least one second connection piece, through which the first fluid flows out of the diffuser space;

e) at least one third and one fourth connection piece, which are flow-connected to the second flow path and through which the second fluid is fed to and discharged from the second flow path;

f) at least one separating element, which substantially prevents the first fluid from entering the second flow path and/or the second fluid from entering the first flow path;

g) the separating element being connected in a sealing manner to the first and second delimiting elements, and the third delimiting element being connected in a sealing manner to the first or second delimiting element and/or the separating element;

h) exchange of heat taking place between the first fluid and the second fluid,

wherein said flow comprises a direct flow when said flow enters said at least one first diffuser space from said first connection piece before it is diverted by a structure in the apparatus for exchanging heat and an indirect flow after said flow is diverted by the structure in the apparatus for exchanging heat.

wherein the sealing connections are cohesive connections, at least the connections in which the material forming the cohesive join is ~~substantially directly exposed to the flow of the first fluid~~ contacted by said direct flow comprising a first connecting material, and

connections in which the material which forms the cohesive join is ~~indirectly exposed to the flow of the first fluid~~ contacted by said indirect flow and not contacted by said direct flow comprising a second connecting material, and the compositions of the first and second connecting materials being different than one another.

2. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the fourth delimiting element is connected in a sealing manner to the first or second delimiting element and/or a further separating element.

3. (Previously presented) The apparatus for exchanging heat as claimed in claims 1, wherein

the first and/or second delimiting elements substantially close off the first and/or second flow path with respect to the environment.

4. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the main direction in which the first delimiting element extends runs substantially parallel to the main direction in which the second delimiting element extends.

5. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the first delimiting element is arranged at least partially inside the second delimiting element in the second flow path.

6. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the separating element is a tube plate, and the first and second delimiting elements are each a tube.

7. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the first delimiting element is surrounded by the separating element at least in regions.

8. (Previously presented) The apparatus for exchanging heat as claimed in claim 1,

wherein the separating element is surrounded at least by an end portion of the second delimiting element, or rests against it at the end side, or in that the separating element surrounds at least the end portion of the second delimiting element.

9. (Previously presented) The apparatus for exchanging heat as claimed in claim 1,

wherein the third delimiting element and/or the fourth delimiting element is/are connected cohesively to the first or second connection piece.

10. (Previously presented) The apparatus for exchanging heat as claimed in claim 1,

wherein the third and/or fourth connection piece is connected to the second delimiting element in a sealing manner using the second connecting material.

11. (Previously presented) The apparatus for exchanging heat as claimed in claim 1,

wherein the first fluid is at a higher temperature than the second fluid.

12. (Previously presented) The apparatus for exchanging heat as claimed in claim 1,

wherein the first fluid is an exhaust gas from a combustion process.

13. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the second fluid is a refrigerant or cooling water.

14. (Previously presented) The apparatus for exchanging heat as claimed in claim 1,

wherein the first connecting material is more resistant to corrosion and/or oxidation than the second connecting material.

15. (Previously presented) The apparatus for exchanging heat as claimed in claim 1, wherein

the cohesive connection is produced by brazing or high-temperature soldering.

16. (Previously presented) The apparatus for exchanging heat as claimed in claim 1 wherein

the first connecting material is selected from a group consisting of nickel solder (Ni solder), gold solder (Au solder), cobalt solder (Co solder), and solders which contain alloys of the metals nickel (Ni), silver (Ag), gold (Au) or cobalt (Co), these metals representing a significant constituent of the alloy in question.

17. (Previously presented) The apparatus for exchanging heat as claimed in claim 1 wherein

the second connecting material is selected from a group of materials consisting of copper solder (Cu solder), silver solder (Ag solder), brass solder and solders which contain alloys of the metals copper (Cu), zinc (Zn) or silver (Ag), these metals representing a significant constituent of the alloy in question.

18. (Previously presented) A process for producing the apparatus for exchanging heat as claimed in claim 1, wherein

a) the separating element, the delimiting elements and the connection pieces, are cohesively connected to one another in a single joining process;

b) the separating element and/or at least one of the delimiting elements, prior to the joining process, being provided at least in regions with the first and/or second connecting material; and

c) the separating element and the delimiting elements, and also the connection pieces, being positively and/or nonpositively connected to one another prior to the joining process and then being fed to the joining process.

19. (Previously presented) The process for producing an apparatus for exchanging heat as claimed in claim 18, wherein the separating element and the delimiting elements, during the joining process, are exposed to a temperature of between 1000° C. and 1200° C for a predetermined period of time.

20. (Previously presented) The process for producing an apparatus for exchanging heat as claimed in claim 18, wherein

the apparatus for exchanging heat, for the purpose of the joining process, is moved through at least one heated zone by means of a conveyor mechanism.

21. (Previously presented) The process for producing an apparatus for exchanging heat as claimed in claim 18,

wherein the joining process takes place under a shielding gas atmosphere, the shielding gas being selected from a group of gases consisting of H<sub>2</sub> (hydrogen gas), N<sub>2</sub> (nitrogen gas), Ar (argon), Kr (krypton), Xe (xenon) and the like, as well as any desired combinations thereof.